

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 31 State 124H - Slot REMUDA NORTH 31 STATE_124H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Project	Eddy County, NM (NAD27) NMEZ US		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Remuda North_South 31 State Pad, centered on 123H			
Site Position:		Northing:	458,327.40 usft	Latitude:	32.2593878
From:	Map	Easting:	627,293.40 usft	Longitude:	-103.9215405
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.22 °

Well	Remuda North 31 State 124H - Slot REMUDA NORTH 31 STATE_124H_SHL					
Well Position	+N/-S	0.00 usft	Northing:	458,327.80 usft	Latitude:	32.2593882
	+E/-W	0.00 usft	Easting:	627,353.30 usft	Longitude:	-103.9213467
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,215.00 usft

Wellbore	North 31 124H Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2018/06/04	7.01	60.03	47,824

Design	North 31 124H Lateral (AsDrilled)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.51	

Survey Program	Date	2018/11/02			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
143.00	24,138.00	Survey #1 (North 31 124H Lateral)	MWD	MWD v3:standard declination	
24,195.00	24,195.00	Survey #2 (North 31 124H Lateral)	Projection	Projection	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
REMUDA NORTH 31 STATE_113H_SHL - REMUDA NORTH 31 STATE_124H_SHL - REMUDA NORTH 31 STATE_123H_SHL										
143.00	0.10	127.00	143.00	-0.08	0.10	-0.08	0.07	0.07	0.00	
193.00	1.30	27.00	193.00	0.40	0.39	0.40	2.64	2.40	-200.00	
288.00	0.40	49.00	287.98	1.58	1.13	1.57	0.99	-0.95	23.16	
378.00	1.30	50.00	377.97	2.44	2.15	2.43	1.00	1.00	1.11	
465.00	1.70	53.00	464.94	3.86	3.94	3.82	0.47	0.46	3.45	
565.00	1.60	91.70	564.91	4.71	6.52	4.65	1.10	-0.10	38.70	
655.00	1.90	91.30	654.86	4.64	9.27	4.56	0.33	0.33	-0.44	

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Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	3215+30 @ 3245.00usft (Akita90)
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Grid
Design:	North 31 124H Lateral (AsDrilled)	Database:	Minimum Curvature
			TP_EDM

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
751.00	2.10	87.10	750.80	4.69	12.61	4.58	0.26	0.21	-4.37	
846.00	1.00	81.00	845.77	4.91	15.17	4.78	1.17	-1.16	-6.42	
941.00	1.10	81.80	940.75	5.17	16.89	5.02	0.11	0.11	0.84	
1,036.00	1.50	81.30	1,035.73	5.48	19.02	5.32	0.42	0.42	-0.53	
1,131.00	1.90	79.90	1,130.69	5.95	21.80	5.76	0.42	0.42	-1.47	
1,226.00	0.40	332.90	1,225.67	6.52	23.20	6.32	2.16	-1.58	-112.63	
1,320.00	0.60	317.20	1,319.67	7.17	22.72	6.98	0.26	0.21	-16.70	
1,415.00	0.60	350.80	1,414.66	8.03	22.30	7.84	0.37	0.00	35.37	
1,509.00	0.70	357.00	1,508.65	9.09	22.19	8.90	0.13	0.11	6.60	
1,604.00	0.90	8.40	1,603.64	10.41	22.27	10.22	0.27	0.21	12.00	
1,700.00	1.10	15.90	1,699.63	12.04	22.63	11.85	0.25	0.21	7.81	
1,794.00	1.20	17.30	1,793.61	13.85	23.17	13.65	0.11	0.11	1.49	
1,889.00	1.50	14.20	1,888.58	16.00	23.77	15.80	0.32	0.32	-3.26	
1,984.00	1.70	15.10	1,983.55	18.57	24.45	18.36	0.21	0.21	0.95	
2,080.00	1.60	9.40	2,079.51	21.26	25.04	21.05	0.20	-0.10	-5.94	
2,175.00	2.10	20.70	2,174.46	24.20	25.87	23.98	0.65	0.53	11.89	
2,270.00	2.20	23.80	2,269.39	27.50	27.22	27.26	0.16	0.11	3.26	
2,365.00	2.20	23.80	2,364.32	30.83	28.69	30.59	0.00	0.00	0.00	
2,460.00	2.50	23.00	2,459.24	34.41	30.24	34.15	0.32	0.32	-0.84	
2,555.00	2.60	27.20	2,554.15	38.23	32.03	37.96	0.22	0.11	4.42	
2,650.00	2.80	27.00	2,649.04	42.22	34.07	41.93	0.21	0.21	-0.21	
2,745.00	2.90	28.80	2,743.92	46.39	36.28	46.08	0.14	0.11	1.89	
2,840.00	3.00	43.50	2,838.80	50.30	39.15	49.96	0.80	0.11	15.47	
2,935.00	2.10	77.10	2,933.71	52.49	42.56	52.13	1.80	-0.95	35.37	
3,030.00	1.20	71.80	3,028.67	53.19	45.20	52.80	0.96	-0.95	-5.58	
3,124.00	0.80	52.50	3,122.66	53.90	46.65	53.50	0.55	-0.43	-20.53	
3,219.00	1.20	343.40	3,217.64	55.25	46.90	54.85	1.24	0.42	-72.74	
3,314.00	1.60	336.20	3,312.62	57.42	46.08	57.03	0.46	0.42	-7.58	
3,409.00	1.50	335.00	3,407.58	59.76	45.02	59.38	0.11	-0.11	-1.26	
3,504.00	1.50	333.40	3,502.55	62.00	43.93	61.62	0.04	0.00	-1.68	
3,598.00	1.50	329.70	3,596.52	64.16	42.76	63.80	0.10	0.00	-3.94	
3,693.00	1.60	330.20	3,691.48	66.39	41.48	66.03	0.11	0.11	0.53	
3,789.00	1.40	326.20	3,787.45	68.52	40.16	68.18	0.24	-0.21	-4.17	
3,883.00	2.20	348.90	3,881.40	71.25	39.17	70.91	1.12	0.85	24.15	
3,978.00	2.80	356.10	3,976.31	75.35	38.66	75.02	0.71	0.63	7.58	
4,072.00	2.90	356.60	4,070.20	80.02	38.37	79.69	0.11	0.11	0.53	
4,167.00	2.80	354.50	4,165.08	84.73	38.00	84.40	0.15	-0.11	-2.21	
4,262.00	2.80	354.80	4,259.96	89.35	37.57	89.02	0.02	0.00	0.32	
4,357.00	2.60	353.80	4,354.86	93.80	37.12	93.48	0.22	-0.21	-1.05	
4,452.00	2.50	352.40	4,449.76	98.00	36.62	97.68	0.12	-0.11	-1.47	
4,547.00	2.60	350.10	4,544.67	102.17	35.97	101.86	0.15	0.11	-2.42	
4,642.00	1.80	344.60	4,639.60	105.73	35.21	105.43	0.87	-0.84	-5.79	

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Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,737.00	1.80	346.00	4,734.55	108.62	34.45	108.32	0.05	0.00	1.47
4,832.00	1.10	354.10	4,829.52	110.97	33.99	110.68	0.77	-0.74	8.53
4,927.00	1.00	351.70	4,924.51	112.70	33.78	112.41	0.11	-0.11	-2.53
5,022.00	1.00	354.00	5,019.49	114.35	33.58	114.06	0.04	0.00	2.42
5,117.00	0.30	33.90	5,114.49	115.38	33.63	115.09	0.84	-0.74	42.00
5,212.00	0.40	54.10	5,209.48	115.78	34.03	115.49	0.17	0.11	21.26
5,306.00	0.40	50.40	5,303.48	116.18	34.55	115.88	0.03	0.00	-3.94
5,401.00	0.40	56.90	5,398.48	116.57	35.09	116.27	0.05	0.00	6.84
5,496.00	0.50	61.80	5,493.48	116.95	35.73	116.64	0.11	0.11	5.16
5,590.00	0.40	60.90	5,587.47	117.30	36.38	116.99	0.11	-0.11	-0.96
5,685.00	0.30	103.50	5,682.47	117.41	36.91	117.09	0.29	-0.11	44.84
5,780.00	0.30	92.60	5,777.47	117.34	37.40	117.01	0.06	0.00	-11.47
5,875.00	0.30	94.30	5,872.47	117.31	37.90	116.98	0.01	0.00	1.79
5,970.00	0.30	114.40	5,967.47	117.19	38.37	116.86	0.11	0.00	21.16
6,065.00	0.30	118.90	6,062.47	116.96	38.81	116.63	0.02	0.00	4.74
6,159.00	0.30	150.40	6,156.47	116.63	39.15	116.29	0.17	0.00	33.51
6,254.00	1.10	11.40	6,251.46	117.31	39.45	116.97	1.41	0.84	-146.32
6,349.00	0.90	7.00	6,346.45	118.94	39.73	118.60	0.23	-0.21	-4.63
6,444.00	1.00	321.30	6,441.43	120.33	39.30	119.99	0.78	0.11	-48.11
6,538.00	0.60	307.70	6,535.42	121.27	38.40	120.94	0.47	-0.43	-14.47
6,633.00	0.50	297.70	6,630.42	121.77	37.64	121.44	0.15	-0.11	-10.53
6,728.00	0.50	289.50	6,725.42	122.10	36.88	121.78	0.08	0.00	-8.63
6,823.00	0.30	269.40	6,820.41	122.23	36.24	121.92	0.25	-0.21	-21.16
6,918.00	0.40	240.20	6,915.41	122.07	35.70	121.76	0.21	0.11	-30.74
7,013.00	0.40	210.00	7,010.41	121.61	35.25	121.31	0.22	0.00	-31.79
7,107.00	0.30	343.40	7,104.41	121.57	35.01	121.26	0.69	-0.11	141.91
7,202.00	0.80	9.30	7,199.41	122.46	35.05	122.16	0.57	0.53	27.26
7,295.00	1.20	357.30	7,292.39	124.07	35.11	123.77	0.48	0.43	-12.90
7,390.00	1.10	350.30	7,387.37	125.96	34.91	125.66	0.18	-0.11	-7.37
7,485.00	1.20	345.00	7,482.35	127.82	34.50	127.53	0.15	0.11	-5.58
7,580.00	1.50	339.50	7,577.33	129.95	33.80	129.66	0.34	0.32	-5.79
7,675.00	1.30	301.20	7,672.30	131.67	32.45	131.39	0.99	-0.21	-40.32
7,770.00	1.20	297.00	7,767.28	132.68	30.64	132.42	0.14	-0.11	-4.42
7,865.00	1.30	284.20	7,862.25	133.40	28.71	133.15	0.31	0.11	-13.47
7,960.00	1.40	288.00	7,957.23	134.02	26.56	133.79	0.14	0.11	4.00
8,054.00	1.60	280.10	8,051.20	134.61	24.18	134.40	0.31	0.21	-8.40
8,149.00	1.60	270.10	8,146.16	134.84	21.54	134.65	0.29	0.00	-10.53
8,244.00	1.80	246.90	8,241.12	134.26	18.85	134.09	0.75	0.21	-24.42
8,339.00	2.20	244.40	8,336.06	132.89	15.83	132.75	0.43	0.42	-2.63
8,434.00	2.00	242.20	8,431.00	131.32	12.72	131.21	0.23	-0.21	-2.32
8,529.00	2.40	243.90	8,525.93	129.68	9.46	129.59	0.43	0.42	1.79
8,624.00	2.50	258.50	8,620.84	128.39	5.65	128.34	0.66	0.11	15.37
8,718.00	2.10	256.00	8,714.76	127.56	1.97	127.54	0.44	-0.43	-2.66

Survey Report

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Well:	Remuda North 31 State 124H	North Reference:	3215+30 @ 3245.00usft (Akita90)
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Design:	North 31 124H Lateral (AsDrilled)	Database:	Minimum Curvature
			TP_EDM

Survey										
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8,813.00	2.00	263.60	8,809.70	126.96	-1.37	126.96	0.30	-0.11	8.00	
8,907.00	2.30	271.70	8,903.64	126.83	-4.88	126.87	0.45	0.32	8.62	
9,003.00	1.60	258.30	8,999.58	126.62	-8.12	126.68	0.87	-0.73	-13.96	
9,098.00	1.00	255.50	9,094.56	126.14	-10.22	126.22	0.63	-0.63	-2.95	
9,192.00	0.30	246.60	9,188.55	125.84	-11.24	125.93	0.75	-0.74	-9.47	
9,287.00	0.30	355.90	9,283.55	125.99	-11.49	126.08	0.52	0.00	115.05	
9,382.00	0.50	11.20	9,378.55	126.64	-11.43	126.73	0.24	0.21	16.11	
9,450.00	0.70	332.50	9,446.54	127.30	-11.56	127.39	0.65	0.29	-56.91	
9,516.00	1.30	287.20	9,512.54	127.88	-12.46	127.98	1.44	0.91	-68.64	
9,611.00	0.70	311.80	9,607.52	128.58	-13.92	128.70	0.76	-0.63	25.89	
9,705.00	1.60	17.30	9,701.50	130.22	-13.96	130.33	1.55	0.96	69.68	
9,800.00	2.20	22.70	9,796.45	133.17	-12.86	133.27	0.66	0.63	5.68	
9,895.00	2.50	49.40	9,891.37	136.20	-10.59	136.28	1.18	0.32	28.11	
9,990.00	1.60	101.20	9,986.32	137.29	-7.71	137.35	2.07	-0.95	54.53	
10,085.00	0.80	140.90	10,081.30	136.52	-5.99	136.56	1.17	-0.84	41.79	
10,184.00	1.40	160.50	10,180.28	134.84	-5.15	134.88	0.71	0.61	19.80	
10,216.00	1.10	152.10	10,212.27	134.20	-4.88	134.24	1.10	-0.94	-26.25	
10,248.00	1.20	68.80	10,244.27	134.05	-4.42	134.08	4.78	0.31	-260.31	
10,279.00	2.50	26.40	10,275.25	134.77	-3.82	134.80	5.82	4.19	-136.77	
10,311.00	4.50	6.20	10,307.19	136.65	-3.37	136.67	7.25	6.25	-63.12	
10,342.00	7.50	352.80	10,338.02	139.86	-3.50	139.89	10.62	9.68	-43.23	
10,374.00	11.10	353.30	10,369.60	145.00	-4.12	145.03	11.25	11.25	1.56	
10,405.00	13.60	359.00	10,399.88	151.61	-4.53	151.64	8.96	8.06	18.39	
10,437.00	15.90	1.70	10,430.82	159.75	-4.46	159.78	7.50	7.19	8.44	
10,469.00	18.40	0.80	10,461.40	169.18	-4.26	169.21	7.86	7.81	-2.81	
10,500.00	21.40	1.50	10,490.54	179.73	-4.05	179.76	9.71	9.68	2.26	
10,531.00	24.00	2.10	10,519.14	191.69	-3.67	191.71	8.42	8.39	1.94	
10,564.00	26.80	2.30	10,548.94	205.83	-3.12	205.85	8.49	8.48	0.61	
10,595.00	29.30	1.60	10,576.30	220.40	-2.63	220.41	8.13	8.06	-2.26	
10,627.00	31.70	1.20	10,603.87	236.63	-2.24	236.64	7.53	7.50	-1.25	
10,658.00	34.40	359.60	10,629.85	253.54	-2.13	253.55	9.15	8.71	-5.16	
10,690.00	38.00	356.90	10,655.67	272.42	-2.72	272.43	12.30	11.25	-8.44	
10,722.00	42.40	355.20	10,680.11	293.02	-4.16	293.04	14.17	13.75	-5.31	
10,753.00	46.70	355.20	10,702.20	314.68	-5.98	314.72	13.87	13.87	0.00	
10,785.00	50.40	356.00	10,723.38	338.59	-7.81	338.65	11.71	11.56	2.50	
10,816.00	52.80	357.00	10,742.63	362.84	-9.29	362.91	8.14	7.74	3.23	
10,848.00	54.40	357.90	10,761.62	388.57	-10.44	388.65	5.49	5.00	2.81	
10,880.00	57.60	357.30	10,779.51	415.07	-11.55	415.16	10.12	10.00	-1.87	
10,911.00	61.30	356.20	10,795.27	441.72	-13.07	441.82	12.32	11.94	-3.55	
10,943.00	64.90	355.20	10,809.74	470.17	-15.21	470.29	11.59	11.25	-3.12	
10,974.00	68.00	353.80	10,822.13	498.46	-17.94	498.59	10.82	10.00	-4.52	
10,999.12	70.43	352.78	10,831.04	521.77	-20.69	521.93	10.41	9.68	-4.08	
REMUDA NORTH 31 STATE_123H_LP(179FNL504FWL)										

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 31 State 124H - Slot REMUDA NORTH 31 STATE_124H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,006.00	71.10	352.50	10,833.31	528.22	-21.52	528.38	10.41	9.70	-4.00
11,038.00	75.20	352.50	10,842.58	558.58	-25.52	558.77	12.81	12.81	0.00
11,069.00	78.30	352.90	10,849.68	588.50	-29.35	588.73	10.08	10.00	1.29
11,101.00	80.30	353.10	10,855.63	619.71	-33.18	619.97	6.28	6.25	0.62
11,116.00	81.33	352.63	10,858.02	634.40	-35.02	634.68	7.54	6.87	-3.13
Wellpath Crosses Unit Line @ Heel									
11,133.00	82.50	352.10	10,860.41	651.09	-37.26	651.38	7.54	6.88	-3.12
11,164.00	84.80	351.50	10,863.84	681.58	-41.65	681.91	7.66	7.42	-1.94
11,170.93	85.23	351.65	10,864.44	688.40	-42.66	688.74	6.62	6.25	2.19
REMUDA NORTH 31 STATE_124H_LP p2 (52'FSL)									
11,196.00	86.80	352.20	10,866.18	713.17	-46.17	713.53	6.62	6.25	2.19
11,227.00	88.10	353.10	10,867.56	743.88	-50.14	744.28	5.10	4.19	2.90
11,322.00	88.30	351.80	10,870.55	838.01	-62.61	838.51	1.38	0.21	-1.37
11,417.00	90.20	354.80	10,871.79	932.34	-73.69	932.93	3.74	2.00	3.16
11,448.00	90.59	356.27	10,871.58	963.24	-76.11	963.85	4.90	1.26	4.74
Wellpath Crosses 330°HL @ Heel									
11,464.26	90.80	357.04	10,871.38	979.48	-77.05	980.09	4.90	1.26	4.74
REMUDA NORTH 31 STATE_124H_FTP(347FNL346FEL)									
11,466.00	90.82	357.12	10,871.35	981.21	-77.14	981.83	4.90	1.26	4.74
Wellpath Crosses FTP @ 379°FEL									
11,473.10	90.91	357.46	10,871.25	988.31	-77.48	988.93	4.90	1.26	4.74
REMUDA NORTH 31 STATE_113H_FTP(347FSL496FEL)									
11,481.82	91.02	357.87	10,871.10	997.01	-77.83	997.64	4.90	1.26	4.74
REMUDA NORTH 31 STATE_123H_FTP(347FSL331FWL)									
11,512.00	91.40	359.30	10,870.46	1,027.18	-78.58	1,027.81	4.90	1.26	4.74
11,607.00	90.80	2.20	10,868.64	1,122.14	-77.34	1,122.76	3.12	-0.63	3.05
11,702.00	92.20	2.10	10,866.15	1,217.04	-73.77	1,217.62	1.48	1.47	-0.11
11,798.00	92.60	3.80	10,862.13	1,312.82	-68.84	1,313.36	1.82	0.42	1.77
11,893.00	91.20	2.80	10,858.98	1,407.61	-63.37	1,408.10	1.81	-1.47	-1.05
11,988.00	91.50	2.20	10,856.74	1,502.49	-59.23	1,502.94	0.71	0.32	-0.63
12,083.00	91.50	1.90	10,854.26	1,597.40	-55.83	1,597.82	0.32	0.00	-0.32
12,178.00	90.70	359.80	10,852.43	1,692.37	-54.42	1,692.77	2.37	-0.84	-2.21
12,273.00	91.40	0.50	10,850.69	1,787.35	-54.18	1,787.74	1.04	0.74	0.74
12,368.00	90.20	0.10	10,849.37	1,882.34	-53.68	1,882.72	1.33	-1.26	-0.42
12,421.00	90.90	0.30	10,848.86	1,935.33	-53.49	1,935.72	1.37	1.32	0.38
12,516.00	91.20	359.20	10,847.12	2,030.31	-53.91	2,030.70	1.20	0.32	-1.16
12,611.00	90.80	358.50	10,845.46	2,125.28	-55.81	2,125.68	0.85	-0.42	-0.74
12,706.00	90.10	358.20	10,844.71	2,220.24	-58.55	2,220.65	0.80	-0.74	-0.32
12,801.00	91.30	358.40	10,843.55	2,315.19	-61.37	2,315.62	1.28	1.26	0.21
12,896.00	90.80	358.30	10,841.81	2,410.13	-64.10	2,410.59	0.54	-0.53	-0.11
12,991.00	88.90	357.60	10,842.06	2,505.06	-67.50	2,505.55	2.13	-2.00	-0.74
13,086.00	89.90	357.70	10,843.05	2,599.98	-71.40	2,600.49	1.06	1.05	0.11
13,181.00	90.10	357.00	10,843.05	2,694.88	-75.79	2,695.42	0.77	0.21	-0.74

Survey Report

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Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,276.00	89.30	358.60	10,843.55	2,789.80	-79.43	2,790.37	1.88	-0.84	1.68
13,370.00	90.20	358.40	10,843.96	2,883.77	-81.89	2,884.36	0.98	0.96	-0.21
13,465.00	91.20	358.40	10,842.80	2,978.72	-84.55	2,979.33	1.05	1.05	0.00
13,560.00	91.00	359.10	10,840.98	3,073.68	-86.62	3,074.31	0.77	-0.21	0.74
13,655.00	92.70	359.20	10,837.91	3,168.62	-88.03	3,169.25	1.79	1.79	0.11
13,749.00	90.90	359.40	10,834.96	3,262.56	-89.18	3,263.20	1.93	-1.91	0.21
13,844.00	89.90	359.00	10,834.29	3,357.55	-90.50	3,358.19	1.13	-1.05	-0.42
13,939.00	90.40	359.10	10,834.05	3,452.53	-92.08	3,453.19	0.54	0.53	0.11
14,034.00	91.00	358.80	10,832.88	3,547.51	-93.82	3,548.18	0.71	0.63	-0.32
14,129.00	89.70	358.70	10,832.30	3,642.48	-95.89	3,643.17	1.37	-1.37	-0.11
14,223.00	90.20	358.50	10,832.39	3,736.45	-98.19	3,737.15	0.57	0.53	-0.21
14,318.00	89.60	358.70	10,832.55	3,831.43	-100.51	3,832.14	0.67	-0.63	0.21
14,413.00	90.30	358.40	10,832.64	3,926.39	-102.91	3,927.13	0.80	0.74	-0.32
14,508.00	90.00	0.00	10,832.39	4,021.38	-104.24	4,022.12	1.71	-0.32	1.68
14,602.00	90.10	359.90	10,832.30	4,115.38	-104.32	4,116.12	0.15	0.11	-0.11
14,697.00	90.80	359.60	10,831.56	4,210.38	-104.73	4,211.11	0.80	0.74	-0.32
14,792.00	89.30	359.90	10,831.48	4,305.37	-105.15	4,306.11	1.61	-1.58	0.32
14,887.00	89.90	0.40	10,832.14	4,400.37	-104.90	4,401.10	0.82	0.63	0.53
14,980.00	90.80	0.00	10,831.57	4,493.37	-104.58	4,494.09	1.06	0.97	-0.43
15,074.00	89.80	0.60	10,831.08	4,587.36	-104.08	4,588.08	1.24	-1.06	0.64
15,170.00	92.80	2.00	10,828.90	4,683.30	-101.91	4,684.00	3.45	3.12	1.46
15,264.00	92.30	1.50	10,824.72	4,777.16	-99.04	4,777.83	0.75	-0.53	-0.53
15,359.00	88.90	0.80	10,823.72	4,872.12	-97.13	4,872.77	3.65	-3.58	-0.74
15,454.00	89.20	0.10	10,825.30	4,967.11	-96.39	4,967.75	0.80	0.32	-0.74
15,549.00	90.80	359.50	10,825.30	5,062.10	-96.72	5,062.74	1.80	1.68	-0.63
15,644.00	90.00	0.50	10,824.64	5,157.10	-96.72	5,157.73	1.35	-0.84	1.05
15,739.00	86.30	1.10	10,827.70	5,252.02	-95.39	5,252.64	3.95	-3.89	0.63
15,833.00	87.00	0.50	10,833.19	5,345.85	-94.08	5,346.46	0.98	0.74	-0.64
15,928.00	87.90	0.00	10,837.42	5,440.76	-93.67	5,441.35	1.08	0.95	-0.53
16,023.00	89.30	359.60	10,839.74	5,535.72	-94.00	5,536.32	1.53	1.47	-0.42
16,118.00	88.20	358.70	10,841.81	5,630.69	-95.41	5,631.30	1.50	-1.16	-0.95
16,212.00	87.10	358.20	10,845.67	5,724.57	-97.95	5,725.20	1.29	-1.17	-0.53
16,307.00	88.70	357.90	10,849.15	5,819.45	-101.18	5,820.10	1.71	1.68	-0.32
16,402.00	88.70	356.60	10,851.31	5,914.32	-105.74	5,915.00	1.37	0.00	-1.37
16,497.00	92.20	358.80	10,850.56	6,009.22	-109.55	6,009.93	4.35	3.68	2.32
16,592.00	96.20	359.00	10,843.60	6,103.92	-111.37	6,104.65	4.22	4.21	0.21
16,687.00	93.60	358.40	10,835.49	6,198.54	-113.52	6,199.28	2.81	-2.74	-0.63
16,782.00	92.20	0.40	10,830.68	6,293.41	-114.51	6,294.16	2.57	-1.47	2.11
16,877.00	90.20	359.70	10,828.69	6,388.38	-114.43	6,389.12	2.23	-2.11	-0.74
16,972.00	90.40	358.70	10,828.20	6,483.37	-115.75	6,484.12	1.07	0.21	-1.05
17,067.00	89.90	356.40	10,827.95	6,578.28	-119.81	6,579.06	2.48	-0.53	-2.42
17,162.00	88.90	356.60	10,828.94	6,673.09	-125.61	6,673.92	1.07	-1.05	0.21
17,257.00	90.60	358.50	10,829.36	6,768.00	-129.67	6,768.86	2.68	1.79	2.00

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 31 State 124H - Slot REMUDA NORTH 31 STATE_124H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,352.00	90.60	359.50	10,828.36	6,862.98	-131.33	6,863.85	1.05	0.00	1.05
17,446.00	91.40	1.20	10,826.72	6,956.96	-130.76	6,957.82	2.00	0.85	1.81
17,541.00	93.40	2.00	10,822.74	7,051.83	-128.11	7,052.66	2.27	2.11	0.84
17,636.00	90.00	1.40	10,819.92	7,146.73	-125.29	7,147.54	3.63	-3.58	-0.63
17,731.00	88.90	359.90	10,820.84	7,241.72	-124.21	7,242.51	1.96	-1.16	-1.58
17,825.00	91.20	359.70	10,820.75	7,335.71	-124.54	7,336.50	2.46	2.45	-0.21
17,920.00	92.10	357.80	10,818.02	7,430.64	-126.61	7,431.45	2.21	0.95	-2.00
18,015.00	91.40	357.40	10,815.12	7,525.52	-130.59	7,526.35	0.85	-0.74	-0.42
18,110.00	90.10	358.40	10,813.87	7,620.44	-134.07	7,621.30	1.73	-1.37	1.05
18,205.00	88.20	0.60	10,815.28	7,715.42	-134.90	7,716.28	3.06	-2.00	2.32
18,299.00	89.30	359.70	10,817.33	7,809.39	-134.65	7,810.25	1.51	1.17	-0.96
18,394.00	88.60	1.40	10,819.08	7,904.37	-133.74	7,905.22	1.93	-0.74	1.79
18,489.00	90.30	1.10	10,819.99	7,999.34	-131.67	8,000.17	1.82	1.79	-0.32
18,584.00	90.00	1.50	10,819.74	8,094.31	-129.51	8,095.12	0.53	-0.32	0.42
18,678.00	87.80	2.20	10,821.54	8,188.24	-126.48	8,189.02	2.46	-2.34	0.74
18,773.00	87.90	1.00	10,825.11	8,283.13	-123.83	8,283.89	1.27	0.11	-1.26
18,868.00	90.70	359.50	10,826.27	8,378.11	-123.42	8,378.86	3.34	2.95	-1.58
18,963.00	90.70	359.90	10,825.11	8,473.10	-123.91	8,473.85	0.42	0.00	0.42
19,058.00	87.80	2.10	10,826.35	8,568.07	-122.26	8,568.80	3.83	-3.05	2.32
19,153.00	86.90	0.90	10,830.74	8,662.93	-119.77	8,663.63	1.58	-0.95	-1.26
19,247.00	91.70	2.00	10,831.89	8,756.86	-117.39	8,757.54	5.24	5.11	1.17
19,342.00	88.50	0.60	10,831.73	8,851.82	-115.24	8,852.48	3.68	-3.37	-1.47
19,437.00	91.00	0.40	10,832.14	8,946.81	-114.41	8,947.46	2.64	2.63	-0.21
19,532.00	94.70	359.90	10,827.42	9,041.68	-114.16	9,042.32	3.93	3.89	-0.53
19,631.00	94.20	359.90	10,819.74	9,140.38	-114.33	9,141.02	0.51	-0.51	0.00
19,726.00	91.80	0.40	10,814.76	9,235.24	-114.08	9,235.88	2.58	-2.53	0.53
19,821.00	91.90	359.10	10,811.70	9,330.19	-114.50	9,330.82	1.37	0.11	-1.37
19,916.00	93.20	0.10	10,807.47	9,425.09	-115.16	9,425.73	1.73	1.37	1.05
20,010.00	90.80	359.90	10,804.19	9,519.02	-115.16	9,519.66	2.56	-2.55	-0.21
20,105.00	90.60	359.40	10,803.03	9,614.01	-115.74	9,614.65	0.57	-0.21	-0.53
20,200.00	87.10	358.60	10,804.94	9,708.97	-117.40	9,709.61	3.78	-3.68	-0.84
20,295.00	86.10	358.20	10,810.57	9,803.76	-120.05	9,804.43	1.13	-1.05	-0.42
20,390.00	85.00	358.80	10,817.94	9,898.44	-122.53	9,899.12	1.32	-1.16	0.63
20,485.00	85.70	358.90	10,825.64	9,993.11	-124.43	9,993.80	0.74	0.74	0.11
20,579.00	89.60	0.40	10,829.50	10,087.01	-125.00	10,087.70	4.44	4.15	1.60
20,674.00	88.80	359.30	10,830.82	10,181.99	-125.25	10,182.69	1.43	-0.84	-1.16
20,769.00	88.60	359.80	10,832.98	10,276.97	-125.99	10,277.67	0.57	-0.21	0.53
20,863.00	89.50	0.00	10,834.54	10,370.95	-126.16	10,371.65	0.98	0.96	0.21
20,958.00	91.40	359.90	10,833.79	10,465.94	-126.24	10,466.64	2.00	2.00	-0.11
21,053.00	91.40	359.10	10,831.47	10,560.91	-127.07	10,561.61	0.84	0.00	-0.84
21,148.00	90.10	357.70	10,830.23	10,655.86	-129.72	10,656.58	2.01	-1.37	-1.47
21,243.00	91.10	357.70	10,829.23	10,750.78	-133.53	10,751.53	1.05	1.05	0.00

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Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
21,337.00	92.30	358.60	10,826.44	10,844.69	-136.57	10,845.45	1.60	1.28	0.96
21,432.00	90.90	357.20	10,823.79	10,939.58	-140.05	10,940.38	2.08	-1.47	-1.47
21,527.00	90.70	357.00	10,822.46	11,034.45	-144.85	11,035.28	0.30	-0.21	-0.21
21,622.00	93.60	357.80	10,818.90	11,129.27	-149.16	11,130.14	3.17	3.05	0.84
21,716.00	92.90	357.60	10,813.57	11,223.05	-152.93	11,223.94	0.77	-0.74	-0.21
21,811.00	91.70	358.80	10,809.76	11,317.92	-155.91	11,318.84	1.79	-1.26	1.26
21,906.00	91.90	359.60	10,806.77	11,412.86	-157.23	11,413.79	0.87	0.21	0.84
22,001.00	92.20	0.80	10,803.38	11,507.80	-156.90	11,508.72	1.30	0.32	1.26
22,095.00	92.20	0.60	10,799.77	11,601.72	-155.75	11,602.63	0.21	0.00	-0.21
22,190.00	91.40	1.30	10,796.78	11,696.66	-154.18	11,697.55	1.12	-0.84	0.74
22,285.00	90.90	1.30	10,794.88	11,791.62	-152.02	11,792.48	0.53	-0.53	0.00
22,380.00	90.00	0.80	10,794.13	11,886.60	-150.28	11,887.45	1.08	-0.95	-0.53
22,475.00	88.80	359.90	10,795.13	11,981.59	-149.70	11,982.43	1.58	-1.26	-0.95
22,570.00	88.20	359.60	10,797.61	12,076.55	-150.12	12,077.39	0.71	-0.63	-0.32
22,664.00	87.60	359.10	10,801.06	12,170.48	-151.18	12,171.33	0.83	-0.64	-0.53
22,759.00	87.60	0.10	10,805.03	12,265.40	-151.85	12,266.24	1.05	0.00	1.05
22,854.00	88.60	0.50	10,808.18	12,360.34	-151.35	12,361.18	1.13	1.05	0.42
22,949.00	89.20	359.30	10,810.01	12,455.32	-151.51	12,456.16	1.41	0.63	-1.26
23,044.00	88.50	358.60	10,811.91	12,550.29	-153.25	12,551.14	1.04	-0.74	-0.74
23,139.00	88.30	359.50	10,814.57	12,645.24	-154.83	12,646.09	0.97	-0.21	0.95
23,234.00	88.30	359.80	10,817.39	12,740.19	-155.41	12,741.05	0.32	0.00	0.32
23,329.00	88.80	0.90	10,819.79	12,835.16	-154.83	12,836.01	1.27	0.53	1.16
23,424.00	88.30	1.60	10,822.19	12,930.10	-152.76	12,930.93	0.91	-0.53	0.74
23,519.00	90.00	2.00	10,823.60	13,025.04	-149.77	13,025.85	1.84	1.79	0.42
23,614.00	91.40	1.80	10,822.44	13,119.98	-146.62	13,120.75	1.49	1.47	-0.21
23,709.00	90.60	0.50	10,820.78	13,214.94	-144.72	13,215.70	1.61	-0.84	-1.37
23,804.00	91.50	1.20	10,819.04	13,309.92	-143.31	13,310.65	1.20	0.95	0.74
23,899.00	90.80	1.80	10,817.14	13,404.86	-140.82	13,405.58	0.97	-0.74	0.63
23,994.00	89.30	1.20	10,817.05	13,499.83	-138.34	13,500.52	1.70	-1.58	-0.63
24,061.69	87.75	359.65	10,818.80	13,567.49	-137.83	13,568.17	3.24	-2.29	-2.29
REMUDA NORTH 31 STATE_113H_LTP(330FNL485FEL)									
24,067.00	87.63	359.53	10,819.01	13,572.80	-137.87	13,573.48	3.24	-2.29	-2.29
Wellpath.Crosses LTP @ 358'FEL									
24,067.99	87.60	359.50	10,819.05	13,573.78	-137.88	13,574.46	3.24	-2.29	-2.29
REMUDA NORTH 31 STATE_124H_LTP(330FNL335FEL)									
24,074.39	87.46	359.36	10,819.33	13,580.18	-137.94	13,580.86	3.24	-2.29	-2.29
REMUDA NORTH 31 STATE_123H_LTP (330FNL,342FWL)									
24,090.00	87.10	359.00	10,820.07	13,595.77	-138.17	13,596.45	3.24	-2.29	-2.29
24,138.00	87.40	358.20	10,822.37	13,643.70	-139.34	13,644.39	1.78	0.62	-1.67
24,193.03	87.40	358.20	10,824.87	13,698.64	-141.07	13,699.34	0.00	0.00	0.00
REMUDA NORTH 31 STATE_113H_PBHL(200FNL485FEL)									
24,195.00	87.40	358.20	10,824.96	13,700.61	-141.13	13,701.31	0.00	0.00	0.00
TD @ 203FNL, 360FEL - REMUDA NORTH 31 STATE_124H_PBHL p2 (200FNL335FEL) - REMUDA NORTH 31 STATE_124H_BHL (203FNL,3									

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda North 31 State 124H - Slot REMUDA NORTH 31 STATE_124H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3215+30 @ 3245.00usft (Akita90)
Site:	Remuda North_South 31 State Pad	MD Reference:	3215+30 @ 3245.00usft (Akita90)
Well:	Remuda North 31 State 124H	North Reference:	Grid
Wellbore:	North 31 124H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	North 31 124H Lateral (AsDrilled)	Database:	TP_EDM

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
REMUDA NORTH 31 S1 - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	458,327.80	627,353.30	32.2593882	-103.9213467
REMUDA NORTH 31 S1 - actual wellpath hits target center - Rectangle (sides W50.00 H12,722.00 D0.00)	0.00	0.00	10,824.9 6	13,700.61	-141.13	472,028.41	627,212.17	32.2970513	-103.9216332
REMUDA NORTH 31 S1 - actual wellpath misses target center by 26.37usft at 24067.99usft MD (10819.05 TVD, 13573.78 N, -137.88 E) - Point	0.00	0.00	10,833.0 0	13,573.40	-115.50	471,901.20	627,237.80	32.2967014	-103.9215518
REMUDA NORTH 31 S1 - actual wellpath misses target center by 30.74usft at 24195.00usft MD (10824.96 TVD, 13700.61 N, -141.13 E) - Rectangle (sides W50.00 H12,722.00 D0.00)	0.00	0.00	10,843.0 0	13,703.40	-116.40	472,031.20	627,236.90	32.2970587	-103.9215531
REMUDA NORTH 31 S1 - actual wellpath misses target center by 33.61usft at 11464.50usft MD (10871.37 TVD, 979.71 N, -77.07 E) - Point	0.00	0.00	10,865.0 0	981.30	-44.10	459,309.10	627,309.20	32.2620862	-103.9214772

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,116.00	10,858.02	634.40	-35.02	Wellpath Crosses Unit Line @ Heel
11,448.00	10,871.58	963.24	-76.11	Wellpath Crosses 330'HL @ Heel
11,466.00	10,871.35	981.21	-77.14	Wellpath Crosses FTP @ 379'FEL
24,067.00	10,819.01	13,572.80	-137.87	Wellpath Crosses LTP @ 358'FEL
24,195.00	10,824.96	13,700.61	-141.13	TD @ 203FNL, 360FEL

Checked By: _____ Approved By: _____ Date: _____